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# Research & Strategic Partnerships: Quarterly Review, Volume 1, Issue 3

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## Research & Strategic Partnerships Quarterly Review

Spring, 2014



Dr. Erin Flynn, Associate Vice President,  
Strategic Partnerships

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### A University Built on Partnerships

This edition of RSP Quarterly Review focuses on programs that connect Portland State's education researchers with their community partners. Improving STEM (Science Technology Engineering and Math) education has emerged as a critical component of technology- dominated economic development across the U.S., including here in Oregon.

Over the past two years, Associate VP of Strategic Partnerships (SP) Erin Flynn has worked with faculty and administrators in the Graduate School of Education, College of Liberal Arts and Sciences, and School of Social Work to inventory and prioritize those education-related collaborations best positioned to be scaled-up for wider application in public schools and work places.

This analysis nicely illustrates the role envisioned by PSU's leaders when they created the Office of Research and Strategic Partnerships in 2010. Dr. Flynn has worked with dozens of faculty to analyze and leverage PSU's capabilities in such fields as renewable energy, healthcare delivery, sustainable cities, urban mobility, early childhood education, and aging.

Prior to joining PSU in 2011, Flynn, who has a Ph.D. in political science from MIT, oversaw Portland's economic development, working in the Portland Development Commission. Her policy expertise was recently acknowledged when Governor Kitzhaber selected her to be Chair of the Oregon Business Development Commission, parent organization of the Oregon Innovation Council, which in turn manages the state's three signature research centers. She works closely with Angela Jackson, an entrepreneurship expert who runs the Portland State Business Accelerator, Oregon's oldest, largest, and most successful business incubation facility.

Educational policy and economic development are among the myriad ways that PSU and its strategic partners work together to strengthen our community, economy, and environment.

  
Vice President,  
Research & Strategic Partnerships

*"Strategic Partnerships has significantly advanced PSU's entrepreneurship agenda and is building strategic relationships with the local technology industry that benefit MCECS students and faculty."*

Renjeng Su, D.Sc.  
Dean, Maseeh College of Engineering & Computer Science



## Cultural Responsiveness & Closing the Achievement Gap in Portland Public Schools

In Portland's schools there is a wide gap in achievement among students of different race and ethnicity. Portland Public Schools' (PPS) **Racial Educational Equity Policy** calls the inequity "historic," "persistent," and "unacceptable." To achieve and sustain racial equity, PPS's Board of Education established a number of goals and called on school and district leadership staff to show measurable progress in meeting those goals.

To help PPS fulfill its commitment to all students, Assistant Professors Drs. **Moti Hara** and **Esperanza De La Vega** of the Graduate School of Education have partnered with PPS's Department of Research, Evaluation, and Assessment and Office of Equity & Partnerships to identify schools where culturally responsive practices can be linked to progress in closing the achievement gap.

The PSU-PPS Equity Research partnership merges De La Vega's and Hara's expertise in qualitative and quantitative research methods with district analysts and policy makers familiar with PPS's equity framework in a three year study. In the first year, the investigation will identify the connections between equitable and culturally responsive

practices and student outcomes at several selected schools. Hara and De La Vega will convene an equity conference in 2015 where they will share their results with district stakeholders. They hope their findings **We bring our ideas and methodologies to the table. But it's the teachers, administrators, and staff in the schools who live the practice every day. They take the lessons we learn and turn them into action. That's what I find most powerful about working with schools.**

**Dr. Esperanza De La Vega**

will inform policy decisions that promote equity and student success.

The PSU-PPS Equity Research partnership is funded by the Oregon Department of Education's Office of State Education Equity. Analyzing qualitative data collected in interviews and by PPS's annual Equity and Safe and Civil Schools surveys in conjunction with student data collected on assess-

ment, enrollment/attendance, and discipline/suspensions, Drs. Hara and De La Vega will establish a baseline from which to build methods to recognize schools making gains in closing the achievement gap. The funding will also support the establishment of a professional development process for schools implementing culturally responsive pedagogy and practices, as well as two doctoral students.

With an enrollment of 48,098 students, PPS is the largest and most diverse district in the state. The children who are educated at Portland's public schools are the city's future doctors, educators, scientists, artists, engineers, and entrepreneurs. How the city grows, diversifies, and meets the challenges of the 21st century depends on the success of students attending school in Portland, regardless of their race or ethnicity. With a focus on culturally responsive pedagogy and practices, Drs. De La Vega and Hara will help schools recognize and measure the gains that provide educational equity for all students attending Portland's public schools.

[READ MORE](#)



## Knowledge Grows



Across the country, students are linking classroom learning with gardens growing on their school's grounds. Garden-based learning began flourishing in the early 1990s when schools started supporting instruction by planting gardens—living laboratories where students explore the environment and witness ecology, biology, chemistry, and other sciences in their natural contexts.

**Dr. Dilafruz Williams**, Professor of

Leadership for Sustainability Education/ Educational Leadership and Policy in the Graduate School of Education, studies the burgeoning practice of garden-based learning. Her recent paper, **"Impact of garden-based learning on academic outcomes in schools: Synthesis of research between 1990 and 2010,"** laid the groundwork for future research on school gardens, showing across the board academic benefits for students participating in gardening at schools. She also co-authored the book on garden-based learning: *Learning Gardens and Sustainability Education: Bringing Life to Schools and Schools to Life*.

Dr. Williams is currently working on a Spencer Foundation-funded study of garden-based learning in U.S. Department of Education recognized **"Green Ribbon"** schools. Visiting schools over multiple seasons, she observes the gardens in their educational settings where learning takes place. Dr. Williams collects data from teachers, garden coordinators, and principals to inform her findings and explores the links between classroom content and gardens. The aim of the study is to better understand

garden-based learning, its theories, practices, and how it shapes the overall experience of schooling for students.

"There is a surge of interest in school gardens in Oregon and across the nation related to a convergence of several serious public health concerns," said Dr. Williams. "These include all-time high childhood obesity rates, an increase in Type 2 diabetes among children, particularly children of some minority groups, and food insecurity. As a result, there is heightened interest in teaching students how to grow food. Given these trends, school gardens are becoming a significant feature in educational institutions."

As an instructional strategy, garden-based learning hasn't yet had a long day in the sun. Dr. Williams has shown that it is a successful tool for connecting classroom learning to real-world applications and positive health outcomes. As the practice continues, garden-based learning may also provide pathways into STEM fields for students for whom typical classroom instruction does not while improving overall student health.

## A Partnership to Improve STEM Education

For many years, PSU's Graduate School of Education has been the largest producer of Oregon's K-12 teachers. A key part of that preparation has been the training in Science, Technology, Engineering, and Math (STEM), led by PSU's Center for Science Education (CSE). PSU's STEM leadership has now been recognized with a significant new state investment.

As part of recent statewide educational reforms, Oregon's Department of Education recently granted PSU \$600,000 to establish a "STEM Hub" and launch three initiatives: STEM educator professional development, linking in-school and out-of-school programming, and transforming STEM learning environments in schools.

At the helm of the Hub is the **Portland Metro STEM Partnership (PMSP)**. As a founding member of the PMSP, PSU brings many resources to the table. Through the PMSP's Teachers Academy, in-service teachers in STEM fields receive university credit for professional development courses. PSU's capacity to convene partners and secure funding is also essential to the Partnership's activities. University strategic partners Intel, OHSU, PGE, and Portland Public Schools are all PMSP members.

"In the last few years, the state started looking at STEM workforce development as a critical issue," said **Dr. William Becker**, PMSP Executive Director and Director of the CSE. "If we don't take the steps now to build infrastructure around STEM education, we'll stifle our ability to grow industries essential to the economic prosperity of our state."

A signature part of Governor Kitzhaber's economic vision for the state is the "40-40-20" plan, which aims for 40% of Oregon's citizens to have bachelor's degrees, 40% to have associate's degrees and the remaining 20% to have graduated from high school, all by 2025. Beyond just acquiring these credentials, the quality of life for all Oregonians will be enhanced by the additional benefits of STEM education: critical and creative thinking, perseverance, and a collaborative nature.

Today's kindergartners will be the first class to graduate under 40-40-20. There is no way to know what their world will look like. Working in partnership, the PMSP and PSU can help ensure the class of 2025, educated in Oregon, has every tool they'll need to address whatever challenges the future holds.



## What's in a Number?



For most of us, mathematics education begins early in elementary school. Students learn the basics: addition, subtraction, multiplication, and division. The fundamentals, right?

Assistant Professor **Dr. Eva Thanheiser** of the Fariborz Maseeh Department of Mathematics & Statistics knows there is something even more fundamental than the operations of basic mathematics: the way people conceive of numbers. One of Dr. Thanheiser's research foci is on content knowledge—how well preservice elementary teachers (PTs) know the mathematics they will teach children, conceptions about math and how they develop, the role of children's thinking in PT mathematics education, and what motivates PT to learn math.

According to Dr. Thanheiser, there is a connection between how PTs conceive of multi-digit numbers and their ability to explain algorithms (the rules for solving math problems) conceptually. An understanding of the value of a number and the meaning of digit placement are critical when conveying why algorithms are mathematically valid. In classroom settings, teaching elementary school children why basic algorithms operate the way they do strengthens the foundation of their mathematics education and better prepares them to engage more complex mathematical processes.

"If I write 128 on a piece of paper, most preservice teachers see a one, two, and eight grouped together," said Dr. Thanheiser. "If that is how you see the number, it can be difficult to think about the fact that the one represents 100 ones, which is also 10 tens, five twenties, and so on. The focus is on the digits and not the value their placement assigns them. This kind of thinking makes it hard to explain

why algorithms work."

Conception of the values of digit placement is one topic in Dr. Thanheiser's recently published paper, "Developing prospective teachers' conceptions with well-designed tasks: explaining the success and analyzing conceptual difficulties" The paper addresses a gap in the literature of how PTs develop conceptions of number. In the study, PTs completed mathematical operations using cards with single digits printed on them in one case and Mayan numer-

**If I write 128 on a piece of paper, most preservice teachers see a one, two, and eight grouped together. This kind of thinking makes it hard to explain why algorithms work.**

**Dr. Eva Thanheiser**

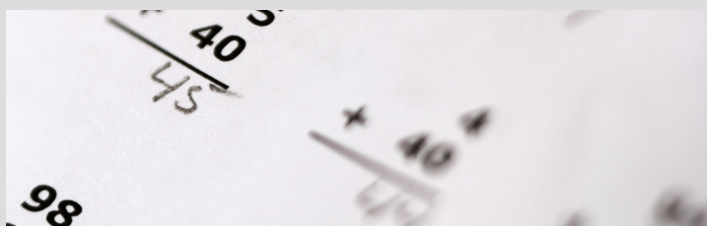
als in another to solve problems. The tasks were designed to help PTs connect digits in a number to their value, to understand the relationships between digits, and to think of numbers in units other than a base-ten (the Maya used a base-20 system).

To help PTs evaluate how they conceive of numbers, Dr. Thanheiser conducts out-of-the-classroom interviews in which students are asked to solve math problems and explain how they came to an answer. According to Dr. Thanheiser, when asked to explain the function of an algorithm, many PTs cannot.

"Often times students have never been asked to solve a problem and reflect on how they came to an answer," said Thanheiser. "Many don't realize the problems can be explained. It is a revelatory moment for them. It motivates them to learn, to take advantage of the resources available in the class."

If our schools are to begin graduating students who meet or outperform their peers in mathematics, and if we are to provide an education in which math is a tool with countless applications rather than problems in a book, then having educators in elementary classrooms capable of teaching students the most fundamental concepts from the very beginning is essential. By educating PTs and adding to the literature informing mathematics educators, Dr. Thanheiser is contributing to the considerable efforts underway in Oregon to reform public education from cradle to career.

**LEARN MORE**



## The Learner Web: Democratizing Adult Education



Education influences health, social and economic mobility, and access to safety and justice. Adults without high school diplomas or GEDs, and adults with limited English or technical skills are more likely to live in poverty, suffer from illness, and find it difficult to advance in the workplace. For most of these adults, education is a ticket to a better life.

**Learner Web** (LW) is a self-access, web-based platform that serves as a learning support system for adults who want to accomplish objectives like earning a GED, improving digital literacy, preparing for college, acquiring English language skills, gaining citizenship, and others. This powerful educational tool was developed and is maintained by the **Literacy, Language, & Technology Research Group** (LLTR) of the Department of Applied Linguistics at PSU.

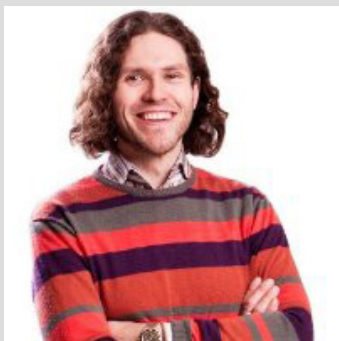
Through the implementation of a non-exclusive licensing program facilitated by the Innovation & Intellectual Property office, LW is operated by a nationwide network of education- and equity-focused organizations. Learning Plans (educational content on LW) are developed by members of the LW community including the Minnesota Literacy Council, the Goodling Institute, the National College Transition Network, PSU, and others. All Learning Plans are shared among organizations; many are available in ESL and visual low-text ESL versions. The key feature of Learning Plans is that they are customizable. Educators can edit content to provide the learners they serve with relevant and timely material.

In Louisiana, the Lindy Boggs National Center for Community Literacy at Loyola University uses LW in a prison reentry program to teach inmates digital literacy skills critical to tasks such as finding employment. In New York, LW supports adult learners transitioning into postsecondary education. The English Language Learner University leverages the resources of LW to enhance the skills of educators working with adult English language learners. And at PSU, Research Assistant Professor **Dr. Jill Castek**, Research Faculty member **Dr. Kathryn Harris**, and members of the LLTR team developed Learning Plans used by over 13,000 adults to acquire a variety of digital skills in a U.S. Department of Commerce sponsored **Broadband Technology Opportunities Program**.

In its six years online, LW has collected over \$227,000 in licensing revenue, funds that have helped it grow and adapt to the needs of its users. Since 2008, twenty-six organizations have joined the LW community in partnerships that have supported tens of thousands of adult learners striving to achieve their educational goals and improve their lives by logging on to this innovative learning support system.

[Read More](#)

## Meet Miska Paulorinne



In February, **Miska Paulorinne** joined the team at Innovation

& Intellectual Property. Miska arrived from the Aalto Center for Entrepreneurship at Aalto University in Espoo, Finland. At Aalto, Miska worked with professors, entrepreneurs, and companies in a number of fields, moving innovations out of labs and into hands capable of bringing them to their full potential.

"I love to inspire people," he said. "And I find creating value for projects and increasing their impact energizing. That's what

excites me about working with faculty and students, technology transfer, and startup companies."

While Miska worked in Europe for many years and holds a Master of Materials Science from Tampere University of Technology in Finland, he is no stranger to the Northwest.

"I lived in Portland and Sisters for several years," he said, "and love both for many reasons. I feel at home in Oregon and am

looking forward to raising my two boys here and exploring the wonders that humankind has made and the marvelous surroundings of nature's creations."

Over the coming months, Miska will continue to meet with faculty, students, and entrepreneurial partners so he can better understand the commercialization opportunities associated with the creativity found in and around PSU.



Partnering with organizations external to the university is a practice many PSU faculty are familiar with. On this page are examples from Psychology and Civil & Environmental Engineering that also include the Veterans Administration, the BPA, Oregon Department of Transportation, and the Oregon Nurses Association.



## Research Highlights from the Department of Psychology

In collaboration with PPS, applied developmental psychologists Professors **Robert Roeser** and **Andrew Mashburn** are conducting a study that has the potential to enhance teaching and learning experiences in the classroom. When practiced in education settings, teacher mindfulness (a conscious, calm, clear and present-oriented form of awareness) may promote teacher wellbeing while at the same time improving educational outcomes for students. Professors Roeser and Mashburn have received \$901,077 in funding from the William T. Grant Foundation, the Spencer Foundation, and PSU to support their project "Testing the Efficacy of Mindfulness Training for Teachers on Improving Classroom Settings for Early Adolescents." Working with teachers in Portland's public schools, the research team is examining the effects of mindfulness training on teachers' self-compassion, resilience, engagement in teaching, as well as classroom climate and quality of teacher-student relationships, and children's motivation, belonging, and engagement in learning.

A year after receiving \$5 million in funding from the Department of Defense in early 2013, Professor **Leslie Hammer** (PI) and Co-Investigators Associate Professors **Cynthia Mohr** and **Todd Bodner** are beginning the data collection phase of their "Study for Employment Retention of Veterans" (SERVe). The research team is developing and testing the efficacy of a training intervention for supervisors of Oregon veterans that aims to help veterans transition back into the civilian workforce. The study will continue through 2016. If the intervention proves successful, it could one day be deployed nationally to the benefit of the women and men who have served in our nation's armed forces.

Assistant Professor **Liu-Qin Yang** studies three ways workers 'fit' with their work environments: personality characteristics, department/organizational factors, and social/cultural contexts. Her investigations examine how our perceptions and experiences in the workplace influence our behavior, productivity, and health. One of Dr. Yang's studies addresses physical and nonphysical aggression (such as being pushed or yelled at) experienced by nurses in healthcare settings, a prime cause of employee attrition in the nursing field. Data collected by the research team has identified leadership and supervisor behaviors that workers thought decreased instances of aggression by patients, patients' families and coworkers. In the future, Dr. Yang's findings could be used in the enactment of leadership and supervisor practices that reduce workplace aggression and improve the healthcare system.

## Research Highlights from the Department of Civil & Environmental Engineering

Associate Professor **Hamid Moradkhani** helps resource managers monitor our most precious natural resource: water. Dr. Moradkhani recently received a \$316,769 grant from the Bonneville Power Administration to conduct a comprehensive assessment of climate change impacts on streamflow in the Columbia River Basin (CRB), the common repository for water flowing out of portions of seven Western states and British Columbia. Dr. Moradkhani will employ a number of methods to improve streamflow projections calculated from atmospheric and hydrologic models. Because

the social, economic, and environmental vitality of the region depends on the water cycle that feeds the CRB, the study will provide critical insights into how to manage this resource as our climate changes.

Associate Professor **Miguel Figliozi** was awarded \$174,350 by the Oregon Department of Transportation (ODOT) to test the use of smartphone and crowdsourcing technologies as new way of measuring quality and use of bike infrastructure. If this method of data collection successfully indicates where bicycle infrastructure is in disrepair or disuse, it could help ODOT target funding to specific areas where improvements such as more bicycle parking or repainted bike lanes are most needed.

Professor **Kelly Clifton** partners with organizations like ODOT, the Oregon Transportation Research and Education Consortium, and the City of Portland to inform urban planners and policy makers of the transportation needs, choices, and desires of the citizenry. Dr. Clifton recently co-authored and published the results of four studies exploring topics such as consumer behavior and travel choices and the interaction between cycling and the use of transit, among others. Much of Dr. Clifton's research reveals the transit preferences of Portlanders. With this information, city planners can shape the livability, sustainability, and economic vitality of Portland for decades to come.



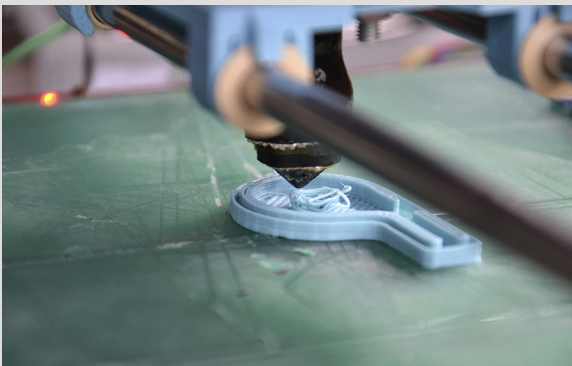
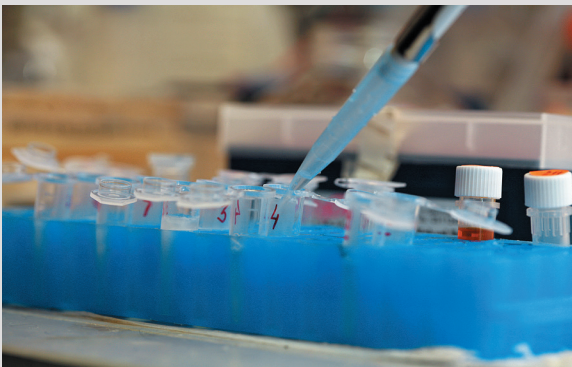
## Powering Oregon's Tech Economy for Ten Years

The **Portland State University Business Accelerator** (PSBA) celebrated its tenth anniversary in March. When it opened in 2004, the PSBA was dedicated to fostering entrepreneurs by connecting resident companies with the resources available at PSU and providing amenities, programs, and access to a community of successful entrepreneurs, mentors, and investors. Ten years later, the Accelerator remains committed to the task, serving over 30 technology and science startups that employ more than 200 people in well-paying high-tech jobs.

In the past three years, companies at the Accelerator have raised more angel and venture capital than any other site in Oregon. Residents DesignMedix, OpenSesame, and Brandlive have all won Oregon Entrepreneurs Network's Angel Oregon Competition. This year's winner (Nouvola) and two other finalists (Energy Storage Systems, Inc., HoneyComb Corporation) are also residents at the PSBA.

During a celebratory reception, Director **Angela Jackson** announced two new partnerships that will help support the Accelerator and resident companies in the coming years. Corvallis-based RelianceCM joined forces with the Accelerator to provide resident companies with the engineering and manufacturing resources to take their hardware (e.g., medical devices) to market. Blue Mountain Community College in Pendleton and the Accelerator have partnered to help startups in the emerging unmanned aerial vehicle sector take advantage of opportunities presented by the FAA's recent deregulation of the industry.

At ten years, the Portland State University Business Accelerator is the region's oldest and one of its most successful incubators. As a dynamo of the state's tech economy, the Accelerator has graduated 124 companies, 63 percent of which are still open for business. Spinouts from all of Oregon's research universities have found a home in the Accelerator, and innovators with big ideas continue to set up shop there. If the first ten years are any indication of what is to come, the Accelerator will undoubtedly turn out more success stories, boost the state's tech economy, and raise the stature of the Silicon Forest growing here in Portland.



### Business Accelerator 2007-2013 Totals



- Private Capital: \$130M
- Revenue: \$63M
- Grants: \$18M+
- Over 700 PSU students and 80 faculty members have collaborated with companies at the PSBA
- Over 10 years, 63% of companies are still in business

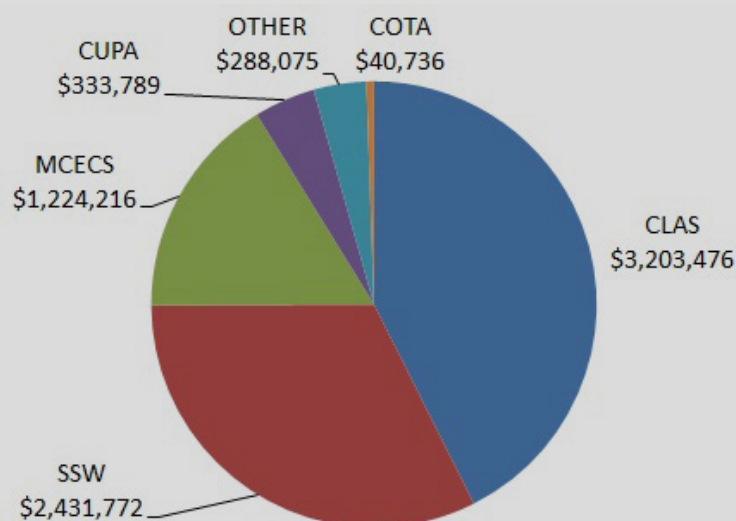
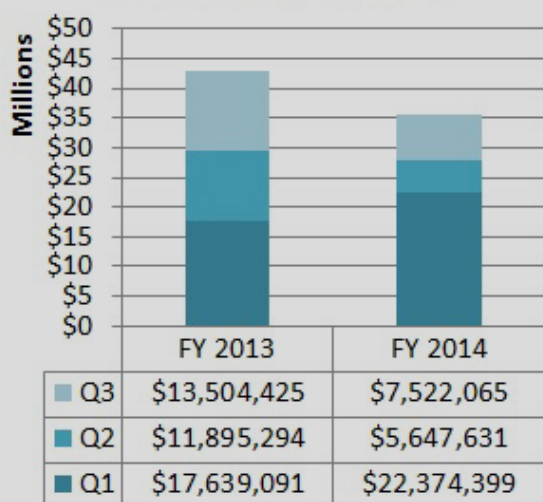


## Research Snapshot

## Third Quarter, Fiscal Year 2014

### Awards Received Q3, 2014

#### Awards by Quarter



## Selected Awards

## [View the Complete List of Awards](#)

- Strongin, Robert**, *A Simple and Robust Indicator for Glutathione*, CLAS, Chemistry, National Institutes of Health, \$434,644, **New Award**, 100% PI
- Burcsu, Theresa**, *Developing a Landscape-Scale Mitigation Program for Sage Grouse*, CLAS, Institute for Natural Resources, \$337,500, **New Award**, 90% PI
- Kagan, James**, *Developing a Landscape-Scale Mitigation Program for Sage Grouse*, CLAS, Institute for Natural Resources, \$37,500, **New Award**, 10% PI
- Thomas, Evan**, *The CellPump Project*, MCECS, Mechanical Engineering, GSMA Mobile for Development Foundation, Inc., \$325,242, **New Award**, 100% PI
- Roeser, Robert**, *Testing the Efficacy of Mindfulness Training for Teachers on Improving Classroom Settings for Early Adolescents*, CLAS, Psychology, Spencer Foundation, \$293,291, **New Award**, 100% PI
- Roeser, Robert**, *MPowering P3 (MP3)*, CLAS, Psychology, Education Service District 112/ Bill and Melinda Gates Foundation, \$256,566, **New Award**, 100% PI
- Atkinson, Dean**, *REU Site: Atmospheric Science Experiences in Portland State University (PSU)'s Center for Climate and Aerosol Research*, CLAS, Chemistry, National Science Foundation, \$204,115, **New Award**, 50% PI
- Parra, Jeremy**, *REU Site: Atmospheric Science Experiences in Portland State University (PSU)'s Center for Climate and Aerosol Research*, CLAS, Environmental Sciences & Management, National Science Foundation, \$204,115, **New Award**, 50% PI

## Research Snapshot

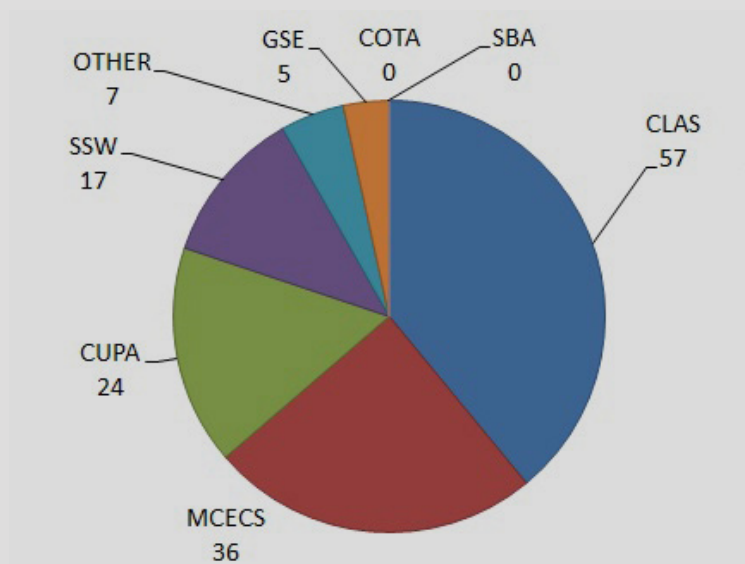
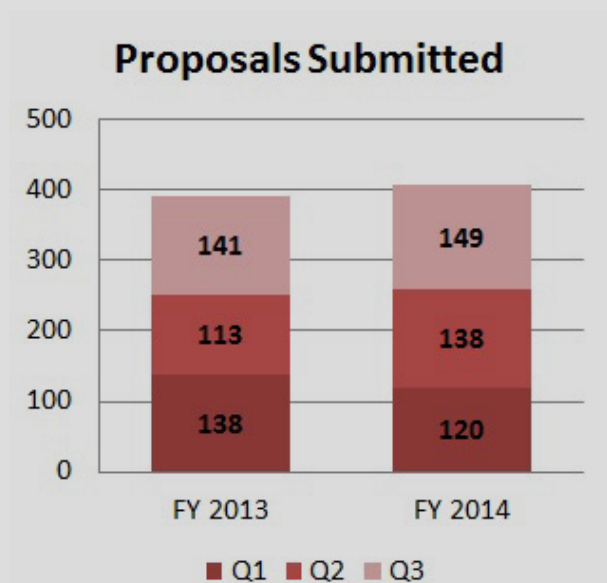
## Selected Awards, Continued

- Pankow, James, *Water-Quality Research for the National Water-Quality Assessment Program - A Multi-Year Investigation*, MCECS, Civil Engineering, US Geological Survey, \$99,960, **New Award**, 100% PI
- Ovall, Jeffrey, *Investigation of Auxiliary Subspace Techniques as a General Tool for A Posteriori Error Estimation*, CLAS, Mathematics & Statistics, National Science Foundation, \$82,308, **New Award**, 100% PI
- Ames, Kenneth, *Wapato Valley Archaeological Project Reports*, CLAS, Anthropology, US Fish & Wildlife Service, \$20,000, **New Award**
- Baney, William, *SSP TANF Family Stability and Employment Initiatives Training Pilot*, SSW, Center for Improvement of Children & Families, Oregon Department of Human Services, \$348,573, **New Award**, 100% PI
- Baney, William, *MESD Project LAUNCH Workforce Development*, SSW, Center for Improvement of Children & Families, Multnomah Education Service District/Substance Abuse and Mental Health Services Administration, \$72,000, **New Award**, 100% PI
- Bertini, Robert, *PORTAL Maintenance and Enhancements*, MCECS, Civil Engineering, Oregon Department of Transportation, \$30,000, **New Award**, 24% PI
- Cahn, Katharine, *Family Connection Grants: Family-Finding/Family Group Decision Making*, SSW, Center for Improvement of Children & Families, Oregon Department of Human Services, Department of Health and Human Services, \$472,409, **Amendment**, 100% PI
- Makler, Jon, *PORTAL Maintenance and Enhancements*, MCECS, Civil Engineering, Oregon Department of Transportation, \$95,000, **New Award**, 76% PI
- Gil-Kashiwabara, Eleanor, *Yellowhawk Systems of Care*, SSW, Regional Research Institute, Yellowhawk Tribal Health Center, \$150,000, **New Award**, 100% PI
- Kelly, Jane, *Novel Broad-Spectrum Antimalarials*, CLAS, Chemistry, National Institutes of Health, \$703,272, **Amendment**, 100% PI
- Zaron, Edward, *Combined Estimation of Tides and Bathymetry from Multi-Satellite Altimetry*, MCECS, Civil Engineering, National Aeronautics and Space Administration, \$148,929, **Amendment**, 100% PI
- Green, Beth, *MESD Project LAUNCH Evaluation*, SSW, Center for Improvement of Children & Families, Multnomah Education Service District/Substance Abuse and Mental Health Services Administration, \$105,718, **New Award**, 100% PI
- MacArthur, John, *Drive Oregon E-Bike Transit Connection Experimental Pilot Project*, RSP, OTREC, Drive Oregon/METRO \$61,183, **New Award**, 100% PI
- Walker, Janet, *Evaluation of the CMS PRTF Waiver Wraparound Implementation Project*, SSW, Regional Research Institute, University of Washington/Department of Health and Human Services Center for Medicare and Medicaid Services, \$100,036, **New Award**, 100% PI
- Farquhar, Stephanie, *Prevent and Reduce Adverse Health Effects of Pesticides for Indigenous Farmworkers*, CUPA, School of Community Health, Oregon Law Center/National Institutes of Health, \$73,885, **Amendment**, 100% PI
- Gopalakrishnan, Jay, *Novel DPG Methods for Wave Propagation*, CLAS, Mathematics & Statistics, University of Texas at Austin, US Air Force, \$87,509, **Amendment**, 100% PI
- Gordon, Sean, *Watershed Assessment Model Development for the Interagency AREMP*, RSP, Institute for Sustainable Solutions Bureau of Land Management, \$126,331, **Amendment**, 100% PI
- Ruzicka, Alex, *The Origin of Large, Igneous-Textured Inclusions in Ordinary Chondrites*, CLAS, Geology, National Aeronautics and Space Administration, \$60,000, **New Award**, 100% PI
- Rockhill, Anna, *Improving Services in Child Welfare and Health Care Systems for Pregnant and Parenting Women Who are Victims of Intimate Partner Violence (Safer Futures)*, SSW, Regional Research Institute, Oregon Department of Justice/Department of Health and Human Services, \$80,000, **New Award**
- Pankow, James, *USGS Intergovernmental Personnel Agreement*, MCECS, Civil Engineering, US Geological Survey, \$93,804, **New Award**, 100% PI
- Lowrey, Marty, *Oregon Child Forensic Interview Training*, SSW, Center for Improvement of Children & Families, Oregon Network of Child Abuse Intervention Centers, \$72,286, **New Award**, 100% PI
- White, Diana, *Dementia Training for Aging and Disability Resource Connection (ADRC) Staff and Partners*, CUPA, Institute on Aging Oregon Department of Human Services, \$50,000, **New Award**, 100% PI

## Research Snapshot

## Third Quarter, Fiscal Year 2014

### Proposals Submitted Q3, 2014



## Selected Proposals

## [View the Complete List of Proposals](#)

**Pankow, James**, *Chemistry of Delivery: Nicotine and Toxicants in Tobacco and E-Cigarette Smoke*, CLAS, Chemistry, National Institutes of Health, \$2,712,727, 75% PI

**Peyton, David**, *Chemistry of Delivery: Nicotine and Toxicants in Tobacco and E-Cigarette Smoke*, CLAS, Chemistry, National Institutes of Health, \$904,242, 25% PI

**Nicolaidis, Christine**, *African American IDEA: A Community-Driven Wellness Intervention for Depression*, SSW, Regional Research Institute National Institutes of Health, \$3,374,170, 100% PI

**Newsom, Jason**, *Racial and Ethnic Differences in Social Influence Processes that Affect Physical Activity in Later Life*, CUPA, Institute on Aging, National Institutes of Health, \$3,259,253, 100% PI

**Kelly, Jane**, *Development of a Class of Highly Potent Molecules into Antimalarial Drugs*, CLAS, Chemistry, National Institutes of Health, \$287,050, 10% PI

**Peyton, David**, *Development of a Class of Highly Potent Molecules into Antimalarial Drugs*, CLAS, Chemistry, National Institutes of Health, \$2,583,446, 90% PI

**Fink, Jonathan**, *Information Technology Research Collaboratory*, RSP, Research & Strategic Partnerships, Business Oregon, \$2,294,000, 100% PI

**Brown, Kim**, *Molecular Mechanisms of Genomic Damage from Environmental Toxicant Exposure*, CLAS, Biology, National Institutes of Health, \$2,093,605, 100%



## Research Snapshot

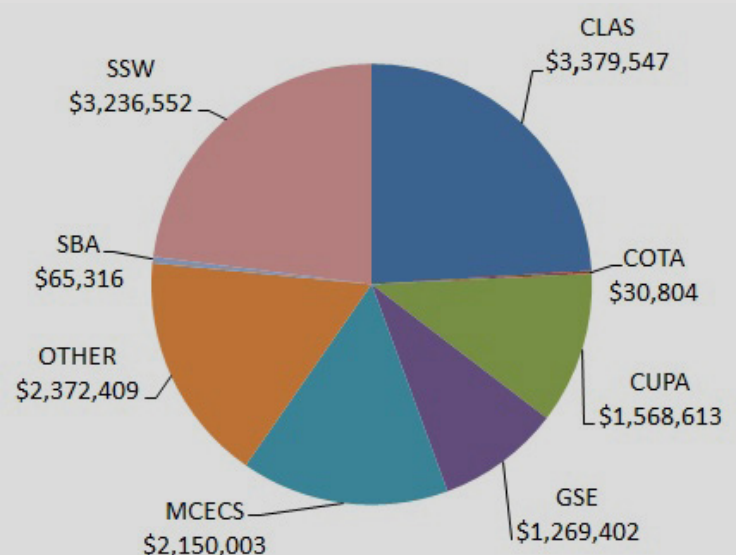
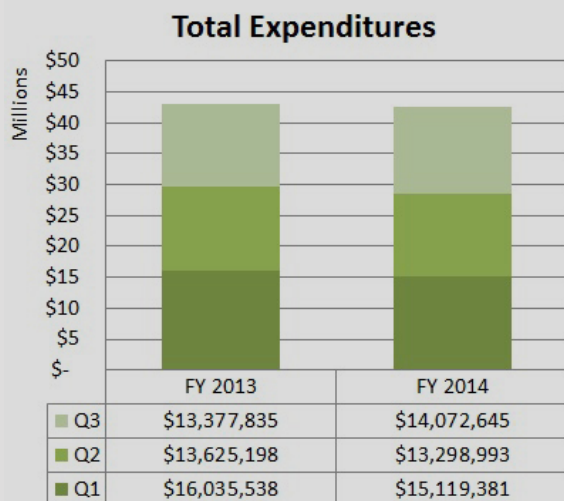
## Selected Proposals, Continued

- Lafrenz, Martin, *Collaborative Research. Natives in the Neighborhood*, CLAS, Geography, National Science Foundation, \$579,635, 30% PI
- Dresner, Marion, *Collaborative Research. Natives in the Neighborhood*, CLAS, Environmental Sciences & Management, National Science Foundation, \$1,159,271, 60% PI
- Murphy, Michael, *Collaborative Research. Natives in the Neighborhood*, CLAS, Biology, National Science Foundation, 10%PI
- Stuart, David, *New Boron Reagents and Catalysts for Direct Aryl Etherfication*, CLAS, Chemistry, National Institutes of Health, \$1,820,934, 100% PI
- Kaufman, Keith, *Effectiveness Evaluation of the Situational Prevention Approach for the Primary Prevention of Sexual Violence*, CLAS, Psychology, Centers for Disease Control and Prevention, \$1,800,000, 100% PI
- Lehman, Niles, *The Evolutionary Advantage of Compartmentalization*, CLAS, Chemistry, Simons Foundation, \$1,544,000, 100% PI
- Castek, Jill, *Scientific discourse in a digital world: A video-based investigation of digitally mediated STEM learning*, CLAS, Applied Linguistics, National Science Foundation, \$1,125,000, 75% PI
- Harris, Katherine, *Scientific discourse in a digital world: A video-based investigation of digitally mediated STEM learning*, CLAS, Applied Linguistics, National Science Foundation, \$187,500, 13% PI
- Hellermann, John, *Scientific discourse in a digital world: A video-based investigation of digitally mediated STEM learning*, CLAS, Applied Linguistics, National Science Foundation, \$187,500, 13% PI
- Richardson, Dawn, *Evaluation of Voices for Healthy Kids*, CUPA, School of Public Health, Robert Wood Johnson Foundation, \$260,000, 20% PI
- Winett, Liana, *Evaluation of Voices for Healthy Kids*, CUPA, School of Public Health, Robert Wood Johnson Foundation, \$429,000, 33% PI
- Cellarius, Karen, *Evaluation of Voices for Healthy Kids*, SSW, Regional Research Institute, Robert Wood Johnson Foundation, \$312,000, 24% PI
- Wallack, Lawrence, *Evaluation of Voices for Healthy Kids*, CUPA, Center for Public Health Studies, Robert Wood Johnson Foundation, \$299,000, 23% PI
- Pommier-Satya, Summer, *My Life Program PCL*, SSW, Regional Research Institute, Portland Children's Levy, \$1,193,499, 100% PI
- Anctil, Tina, *The Clinical Rehabilitation Counseling Education Program (CRCEP)*, GSE, CEP, US Department of Education, \$997,723, 100% PI
- Iwata-Reuyl, Dirk, *RNA Modification: Structure and Function*, CLAS, Chemistry, Western University/National Institutes of Health, \$992,465, 100% PI
- Shusterman, Gwen, *Student-Catalyzed STEM Reform*, CLAS, Chemistry, National Science Foundation, \$464,816, 50% PI
- Strongin, Robert, *Student-Catalyzed STEM Reform*, CLAS, Chemistry, National Science Foundation, \$464,816, 50% PI
- Dill, Jennifer, *2014 TOD Surveys*, CUPA, Center for Urban Studies, Metro, \$13,679, 50% PI
- McNeil, Nathan, *2014 TOD Surveys*, CUPA, Center for Urban Studies, Metro, \$13,679, 50% PI
- Cellarius, Karen, *ACCESS Native American Curriculum Development*, SSW, Regional Research Institute, Oregon Department of Human Services US Department of Education, \$53,147, 89% PI
- Gil-Kashiwabara, *ACCESS Native American Curriculum Development*, SSW, Regional Research Institute, Oregon Department of Human Services US Department of Education, \$6,569, 11% PI
- Dresner, Marion, *Citizen Science: Yard Habitats and Ecological Connectivity in the Portland Metro Area*, CLAS, Environmental Sciences & Management, Metro, \$72,301, 80% PI
- Murphy, Michael, *Citizen Science: Yard Habitats and Ecological Connectivity in the Portland Metro Area*, CLAS, Biology, Metro, \$18,075, 20% PI
- Jay, David, *Collaborative Research: Dynamics of evolving storm tides in US East Coast Estuaries, 1844-2013*, MCECS, Civil Engineering, National Science Foundation, \$226,714, 40% PI
- Talke, Stefan, *Collaborative Research: Dynamics of evolving storm tides in US East Coast Estuaries, 1844-2013*, MCECS, Civil Engineering, National Science Foundation, \$340,072, 60% PI

## Research Snapshot

## Third Quarter, Fiscal Year 2014

### Research Expenditures Q3, 2014



## Q3 Publications

### [View the Complete List of Publications](#)

- Crain, T., Hammer, L., Bodner, T., Kossek, E., Moen, P., Lilienthal, R., Buxton, O., "Work-family conflict, family-supportive supervisor behaviors (FSSB), and sleep outcomes," *Journal of Occupational Health Psychology*. In Press.
- Barstow, C., Ngabo, F., Rosa, G., Majorin, F., Boisson, S., Clasen, T., Thomas, E., "Designing and Piloting a Large-Scale Project to Provide Water Filters and Improved Cookstoves in Rwanda," *PLOS One*, Vol. 9, Issue 3, 2014.
- Cooper, C., "The Co-Curricular and Applied Learning Boom -- The Role of Demand, Validation and Diverse Offerings in Fueling Growth," *Trends in Social Innovation 2014*, Ashoka U Press, February 2014.
- McBeath, B., Chaung, E., Bunker, A., Blakeslee, J., "Under what conditions does caseworker-caregiver racial/ethnic similarity matter for housing service provision? An application of representative bureaucracy theory," *Social Service Review*, Vol. 88, Issue 1, PP.134-165. March 2014.
- Saxton, E., Holveck, S., Prince, D., Skinner, E., Burns, R., Kelley, S., Rigelman, N., "A common measurement system for K-12 STEM education: Adopting an educational evaluation methodology that elevates theoretical foundations and systems thinking," *Studies in Educational Evaluation*, Vol. 40, Issue 1, PP. 18-35. 2014.
- Lycan, R., Rynerson, C., "Older Moms Deliver: How Increased Births to Older Mothers are Impacting School Enrollment" in *Emerging Techniques in Applied Demography*, Springer. In Press.
- Lucash, M., Scheller, R., Kretchun, A., Clark, K., Hom, J., "Impacts of fire and climate change on long-term nitrogen availability and forest productivity in the New Jersey Pine Barrens," *Canadian Journal of Forest Research*, Vol. 44, PP. 404-412. January 2014.

## Research Snapshot

## Q3 Publications, Continued

- DeChant, C., Moradkhani, H., "Hydrologic Prediction and Uncertainty Quantification," *Handbook of Engineering Hydrology, Modeling, Climate Change and Variability*, CRC Press, Taylor & Francis Group, PP. 387-414. . March 2014.
- Gillpatrick, T., et al., "Values-based Supply Chains: Supporting Regional Food and Farms," *Economic Development Quarterly*, February 2014, Vol.28, Number 1, PP. 17-27. February 2014.
- Pugh, G., "Revisiting the pink triangle exercise: An exploration of experiential learning in social work education," *Journal of Teaching in Social Work*, Vol. 34, Issue 1, PP. 17-28. January 2014.
- Rigelman, N., Petrick, K., "Student mathematicians developed through formative assessment cycles," *Annual Perspectives in Mathematics Education: Using Research to Improve Instruction*, PP. 215-227, National Council of Teachers of Mathematics. 2014.
- Dinno, A., "Nonparametric pairwise multiple comparisons in independent groups using Dunn's test," *The Stata Journal*. In Press.
- Thanheiser, E., "Developing prospective teachers' conceptions with well-designed tasks: Explaining successes and analyzing conceptual difficulties," *Journal of Mathematics Teacher Education*, Vol. 17, Issue 1. March 2014.
- Banda, P., Teuscher, C., Stefanovic, D., "Training an Asymmetric Signal Perceptron through Reinforcement in an Artificial Chemistry," *Journal of the Royal Society Interface*, Vol. 1, Issue 93. 2014.
- Kovacs, J., Truxillo, D., Bauer, T., Bodner, T., "Perceptions of affirmative action based on socioeconomic status: A comparison with traditional affirmative action," *Employee Responsibilities and Rights Journal*, Vol. 26, PP. 35-57. March 2014.
- Lingley, A., "Interrogating (Hi)stories: Establishing the Educational Relevance of Spiritual Development Through Critical Historiography," *Peter Lang Critical Qualitative Research Series*, Vol. 12. March 2014.
- Maton, K., Mankowski, E., Anderson, C., Barton, E., Karp, D., Ratjen, B., "Long-term changes among participants in a men's mutual-help organization," *International Journal of Self Help and Self Care*, Vol. 8, PP. 85-112. February 2014.
- Daim, T., Kayakutlu, G., Suharto, Y., Bayram, Y., "Clean energy investment scenarios using the Bayesian network," *International Journal of Sustainable Energy*, Vol. 33, Issue 2, PP. 400-415. March 2014.
- Khoury, T., Cuervo-Cazurra, A., Dau, L., "Institutional insiders and outsiders: The response of domestic and foreign investors to the quality of intellectual property rights protection," *Global Strategy Journal*. In Press.
- Schrock, G., "Remains of the Progressive City: First Source Hiring in Chicago and Portland," *Urban Affairs Review*. In Press.
- Mohr, C., Jacobs, L., McCabe, C., Alley, L., "Psychological Reactivity: Implications for Occupational Health Psychology," *Contemporary Occupational Health Psychology: Global Perspectives on Research and Practice*, Vol. 3. March 2014.
- Pacheco, D., York, J., Hargrave, T., "The co=evolution of industries, social movements, and institutions: The case of wind power," *Organization Science*. In Press.
- Nielsen-Pincus, M., Moseley, C., Gebert, K., "Job growth and loss across sectors and time in the western US: The impact of large wildfires," *Forest Policy and Economics*, Vol. 38, PP. 199-206. January 2014.
- Bhaskaran, H., Taniguchi, T., Suzuki, T., Suzuki, T., Perona, J., "Structural dynamics of a mitochondrial tRNA possessing weak thermodynamic stability," *Biochemistry*, Vol. 53, PP. 1456-1465. March 2014.
- Donaldson, A., "Academic Edge: A Closer Look at Certification Changes for Behavior Analysts: What do new credentialing requirements for board-certified behavior analysts mean for SLPs?" *The ASHA Leader* April 2014, Vol.19. April 2014.
- Hughes, R., Dunham, S., Maas-Hebner, K., Yeakley, J., Schreck, C., Harte, M., Molina, N., Shock, C., Kaczynski, V., "Review of urban water body challenges and approaches: (2) Mitigating effects of future urbanization," *Fisheries*, Vol. 39, Issue 1, PP. 30-40. January 2014.
- Chang, H., Hickey, T., Johnson, G., "Spatial analysis of annual runoff ratios and their variability in contiguous US," *Elsevier*, 511, 387-402. February 2014.
- Clifton, K., Muhs, C., Morrissey, T., Currans, K., "Consumer behavior and travel mode: An exploration of restaurant, drinking establishment and convenience store patrons," *International Journal of Sustainable Transport*. In Press.
- Brown, A., Naha, P., Montes, V., Litt, H., Goforth, A., Cormode, D., "Synthesis, X-ray Opacity, and Biological Compatibility of Ultra-High Payload Elemental Bismuth Nanoparticle X-ray Contrast Agents," *Chemistry of Materials*, Vol. 26, PP. 2266-2274 March 2014.
- Strongin, R., "A photochemical method for determining plasma homocysteine with limited sample processing," *Chemical Communications*, Vol. 50, Issue 23, PP. 3071-3073. March 2012



## Research Snapshot

## Doctoral Degrees Conferred

### Fall, 2013 Graduates

#### Ashley Lynn Boal, Ph.D.

Dissertation Chair:

Eric Mankowski - Psychology

Dissertation title:

*Batterer Intervention Programs' Response to State Standards*

#### Anna Laura Brown, Ph.D.

Dissertation Chair:

Andrea Goforth - Chemistry

Dissertation title:

*Bismuth Nanoparticles as Medical X-ray Contrast Agents: Synthesis, Characterization and Applications*

#### Dana Lyn Director, Ph.D.

Dissertation Chair:

Lindsay Desrochers - Hatfield School of Government

Dissertation title:

*The Impacts of Change in Governance on Faculty and Staff at Higher Education Institutions: A Case Study of OHSU*

#### Sarah Brooks Drummond Hays, Ed.D.

Dissertation Chair:

Christine Cress - Graduate School of Education

Dissertation title:

*Facilitating Master's Student Success: A Quantitative Examination of Student Perspectives on Advising*

#### Akshay Dua, Ph.D.

Dissertation Chair:

Nirupama Bulusu - Computer Science

Dissertation title:

*Trust-but-Verify: Guaranteeing the Integrity of User-generated Content in Online Applications*

#### Laurie Marie Jacobs, Ph.D.

Dissertation Chair:

Cynthia Mohr - Psychology

Dissertation title:

*Work Stress Reactivity and Health Outcomes: A Study of Nurses*

#### Yongxia Kou, Ph.D.

Dissertation Chair:

Carl Abbott - Urban Studies and Planning

Dissertation title:

*The Impacts of Urban Renewal: The Residents' Experiences in Qianmen, Beijing, China*

#### Paul R. Leistner, Ph.D.

Dissertation Chair:

Sy Adler - Urban Studies and Planning

Dissertation title:

*The Dynamics of Creating Strong Democracy in Portland, Oregon - 1974 to 2013*

#### Bing Chun Lin, Ph.D.

Dissertation Chair:

Charlotte Fritz - Psychology

Dissertation title:

*Do Not Disturb: A Micro-Macro Examination of Intrusions at Work*

#### Shahrbanou Madadgar, Ph.D.

Dissertation Chair:

Hamid Moradkhani - Civil and Environmental Engineering

Dissertation title:

*Towards Improving Drought Forecasts Across Different Spatial and Temporal Scales*

#### Margaret Mary Nygren, Ph.D.

Dissertation Chair:

Eileen Brennan - School of Social Work

Dissertation title:

*Exploring the Effects of Multi-Level Protective and Risk Factors on Child and Parenting Outcomes in Families Participating in Healthy Start/Healthy Families Oregon (HS/HFO)*

#### Christian Lee Rummell, Ed.D.

Dissertation Chair:

Karen Noordhoff - Graduate School of Education

Dissertation title:

*A Unique Support for Sexual-Minority Identity Development: An Interpretative Phenomenological Analysis of a Long-Term Formal Mentoring Relationship Between an Adult and a Youth From the Gay Community*

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## Research Snapshot

## Doctoral Degrees Conferred, Continued

### Fall, 2013 Graduates

**Danielle Angelina Sheldrake, Ed.D.**

Dissertation Chair: - Graduate School of Education

Amy Petti

Dissertation title:

*A Comparative Study of Administrator and Special Education Teacher Perceptions of Special Education Teacher Attrition and Retention*

**Benjamin C. Webber, Ph.D.**

Dissertation Chair:

Mark Woods - Chemistry

Dissertation title:

*Investigation of the Structure and Dynamics of Regioisomeric Eu(III) and Gd(III) Chelates of NB-DOTMA: Implications for MRI Contrast Agent Design*

### Winter, 2014 Graduates

**Francis Hua-Hung Chang, Ph.D.**

Dissertation Chair:

Wu-chi Feng - Computer Science

Dissertation title:

*Towards Constructing Interactive Virtual Worlds*

**Una Yi Chi, Ph.D.**

Dissertation Chair:

Ellen Skinner - Psychology

Dissertation title:

*Classroom Engagement as a Proximal Lever for Student Success in Higher Education: What a Self-Determination Framework within a Multi-Level Developmental System Tells Us*

**Geoffrey Scott Diemer, Ph.D.**

Dissertation Chair:

Kenneth Stedman - Biology

Dissertation title:

*The Boiling Springs Lake Metavirome: Charting the Viral Sequence-Space of an Extreme Environment Microbial Ecosystem*

**Matthew Joshua Duveneck, Ph.D.**

Dissertation Chair:

Robert Scheller - Environmental Science and Management

Dissertation title:

*Managing for Resistance and Resilience of Northern Great Lakes Forests to the Effects of Climate Change*

**Ralf Juengling, Ph.D.**

Dissertation Chair:

Melanie Mitchell - Computer Science

Dissertation title:

*Advances in Piecewise Smooth Image Reconstruction*

**Lee Anna Knox, Ph.D.**

Dissertation Chair:

Keith Kaufman - Psychology

Dissertation title:

*Attachment and Adolescent Offending: An Examination of the Links between Sexually Abusive Behavior and the Level of Attachment to Parents and Peers*

**Mariah Ann Kraner, Ph.D.**

Dissertation Chair:

David Kinsella - Hatfield School of Government

Dissertation title:

*Friends or Foes?: Examining Social Capital of International NGOs and Food Security Programs*

**Kristy Lee Ann McNulty, Ed.D.**

Dissertation Chair:

Hanoch Livneh - Graduate School of Education

Dissertation title:

*Adjustment to College among Lower Division Students with Disabilities: An Exploratory Study*

**Michael Chad Miller, Ph.D.**

Dissertation Chair:

Wayne Wakeland - Systems Science Graduate Program

Dissertation title:

*Global Resource Management of Response Surface Methodology*

**Debora Kay Nelli, Ed.D.**

Dissertation Chair:

Jacqueline Temple - Graduate School of Education

Dissertation title:

*Gender Representations in U.S. Ed.D. Dissertations: A Feminist Content Analysis*

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## Research Snapshot

## Doctoral Degrees Conferred, Continued

### Winter, 2014 Graduates

**Mazna Patka, Ph.D.**

Dissertation Chair:

Eric Mankowski - Psychology

Dissertation title:

*Individuals with Intellectual Disabilities in Faith Communities: Perspectives of Catholic Religious Leaders*

**Diana Rempe, Ph.D.**

Dissertation Chair:

Janice Haaken - Psychology

Dissertation title:

*On Thin ICE? Domestic Violence Advocacy and Law Enforcement-Immigration Collaborations*

**Yoko Hwang Sakurauchi, Ed.D.**

Dissertation Chair:

Becky Boesch - Graduate School of Education

Dissertation title:

*Teaching and Learning for Intercultural Sensitivity: A Cross-Cultural Examination of American Domestic Students and Japanese Exchange Students*

**Michael David Thomure, Ph.D.**

Dissertation Chair:

Melanie Mitchell - Computer Science

Dissertation title:

*The Role of Prototype Learning in Hierarchical Models of Vision*